

Patent claims

1. A powder slurry curable thermally and with actinic radiation, comprising
 - (I) constituents containing functional groups (A) which render them curable with actinic radiation, and constituents containing complementary functional groups (B) which render them curable thermally, in a weight ratio of from 50:1 to 1:50.
 - and/or
 - (II) constituents containing the functional groups (A) and (B) which render them curable thermally and with actinic radiation in a molar ratio of from 100:1 to 1:100.
2. The powder slurry as claimed in claim 1, having a solid particles content of from 10 to 60% by weight, in particular from 20 to 50% by weight.
3. The powder slurry as claimed in claim 1 or 2, wherein the constituents containing the functional groups (A) and the constituents containing the functional groups (B) are present together in the solid particles.

4. The powder slurry as claimed in claim 1 or 2,
wherein the constituents containing the functional
groups (A) and the constituents containing the
functional groups (B) are present in solid
particles that are different from one another.

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5. The powder slurry as claimed in claim 1 or 2,
comprising thermally curable solid particles and
10 emulsions and/or dispersions curable with actinic
radiation.

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6. The powder slurry as claimed in claim 1 or 2,
comprising thermally curable solid particles and
15 thermally curable dispersions and/or emulsions.

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7. The powder slurry as claimed in claim 3 or 4,
comprising emulsions and/or dispersions curable
20 thermally and/or curable with actinic radiation.

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8. The powder slurry as claimed in any of claims 1 to
7, comprising polyacrylates, polyesters, alkyd
resins, and/or polyurethanes as thermally curable
binders and (meth)acryloyl-functional (meth)-
25 acrylic copolymers, polyether acrylates, polyester
acrylates, unsaturated polyesters, epoxy
acrylates, urethane acrylates, amino acrylates,
melamine acrylates and/or silicone acrylates

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and/or the corresponding methacrylates as binders curable with actinic radiation.

9. The powder slurry as claimed in any of claims 1 to 5 comprising crosslinking agents for the thermal curing and photoinitiators.

10. A process for preparing a powder slurry curable thermally and with actinic radiation by mixing of 10 its constituents in the melt, milling of the resulting mixture to give solid particles, followed if desired by the wet milling of the solid particles, and dispersion of the solid particles in an aqueous phase, which involves 15 using

20 (I) constituents containing functional groups (A) which render them curable with actinic radiation, and constituents containing complementary functional groups (B) which render them curable thermally, and/or

25 (II) constituents containing the functional groups (A) and (B) which render them curable thermally and with actinic radiation.

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11. A process for preparing a pseudoplastic powder slurry curable thermally and with active radiation by

5 1) emulsification of an organic solution comprising

A2
CWD
10 1.1) thermally curable constituents and

1.2) constituents curable with actinic radiation and/or

1.3) constituents curable thermally and with actinic radiation

15 to give an emulsion of the oil-in-water type,

2) removal of the organic solvent or the organic solvents, and

20 3) partial or complete replacement of the solvent volume removed by water, to give a powder slurry comprising solid spherical particles,

25 wherein the powder slurry is further admixed with

4) at least one ionic, especially anionic, thickener and at least one nonionic associative thickener.

5 12. The process as claimed in claim 11, wherein water-miscible organic solvents are used.

10 13. The process as claimed in claim 11 or 12, wherein the organic solvents are removed at temperatures below the glass transition temperature T_g of the binders.

15 14. The use of the powder slurry as claimed in any of claims 1 to 9 or of the powder slurry prepared as claimed in any of claims 10 to 13 to prepare clearcoat materials for automotive OEM finishing and automotive refinish, industrial coating, including coil coating and container coating, and furniture coating.

20 15. A clearcoat material prepared from the powder slurry as claimed in any of claims 1 to 9 or the powder slurry prepared as claimed in any of claims 10 to 13.

25 16. The use of the clearcoat material as claimed in claim 15 to produce single-coat or multicoat

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clearcoat systems in automotive OEM finishing and automotive refinish and in industrial coating.

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17. A shaped part, in particular of metal, glass, wood and/or plastic, which is coated with a single-coat or multicoat clearcoat system, wherein the clearcoat film or at least one of the clearcoat films has been produced from the clearcoat material as claimed in claim 15.

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